EASYLOGIX.DE

PCB-Investigator Physics

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PCBi - Physics

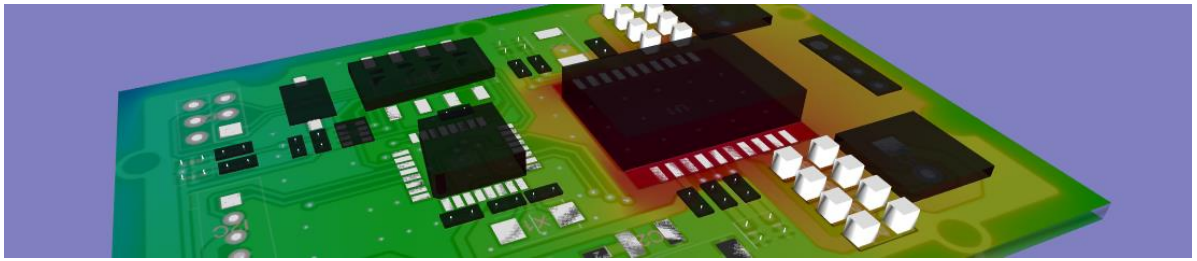
Why do I need PCBi - Physics?

PCB-Investigator Physics is the perfect tool to simulate the **physical behaviour** of your Printed Circuit Boards during development phase.

It enables you to find **thermal hotspots**, critical trace **resistances** and **voltage drops** that are too high, even before prototyping begins!

With the built-in editing functions of PCB-Investigator Physics it's even possible to **optimize the layout** and stack-up to achieve the best possible physical behaviour with only a few clicks!

Save valuable time and prototype costs with the simulations of PCBi-Physics!



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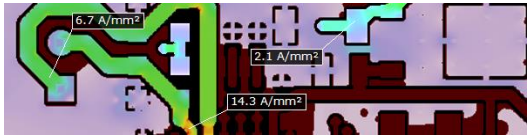
Why do I need PCBi - Physics?

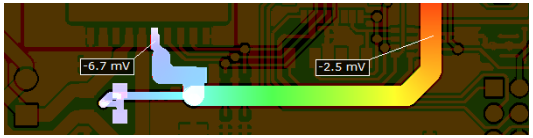
To get information about the physical behaviour of your Printed Circuit Board during operation, PCB-Investigator Physics enables you to simulate the following physical properties:

- The **Temperature** raise at each location of the PCB caused by power loss of components or by high currents

- The **Current Density**, e.g. at copper bottlenecks or in drills



- The **Voltage Drop** and **Copper Resistance** between any pins on any layer



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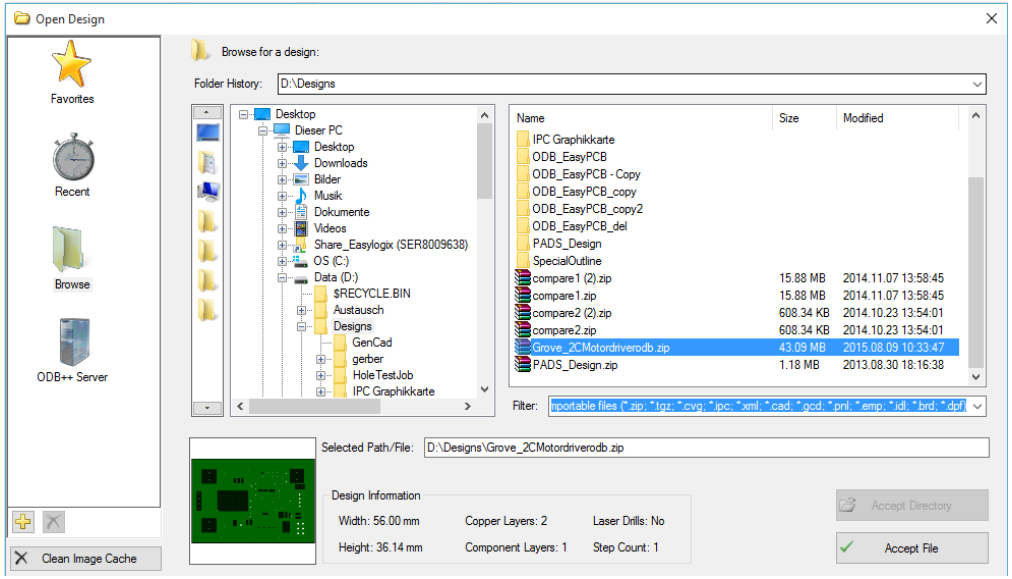
Which data is needed?

As input data you can select any CAD format supported by PCB-Investigator.

Supported formats are:

- ODB++
- GenCAD
- IPC2581
- IDF 2.0 / 3.0
- Gerber274x
- ...



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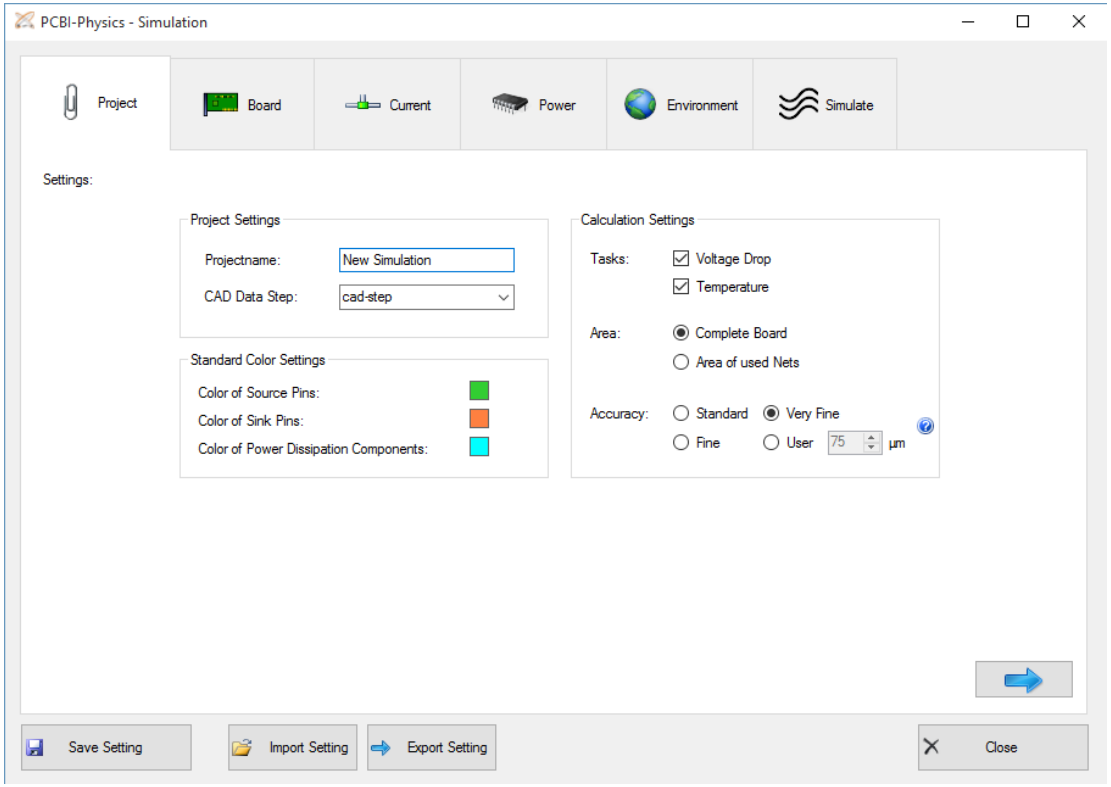
How to run the Simulation?

1) Enter general Project parameters



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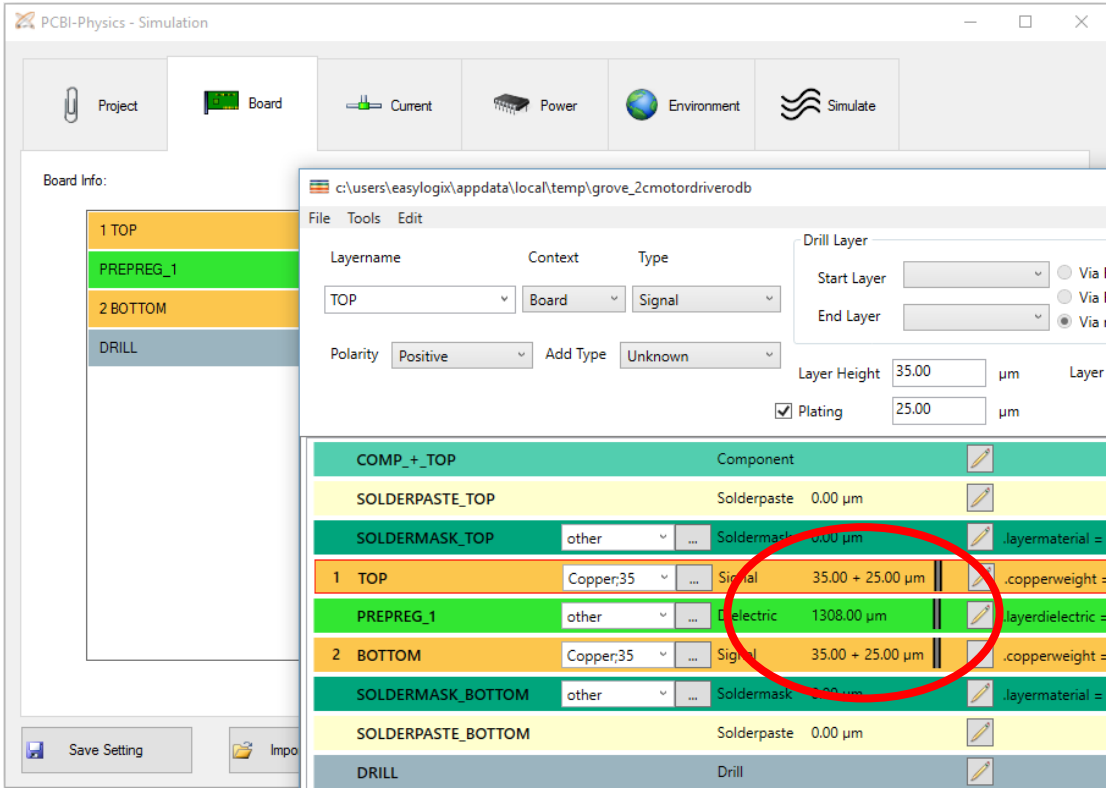
How to run the Simulation?

2) Enter Stack-Up information (Copper foils, Prepregs)



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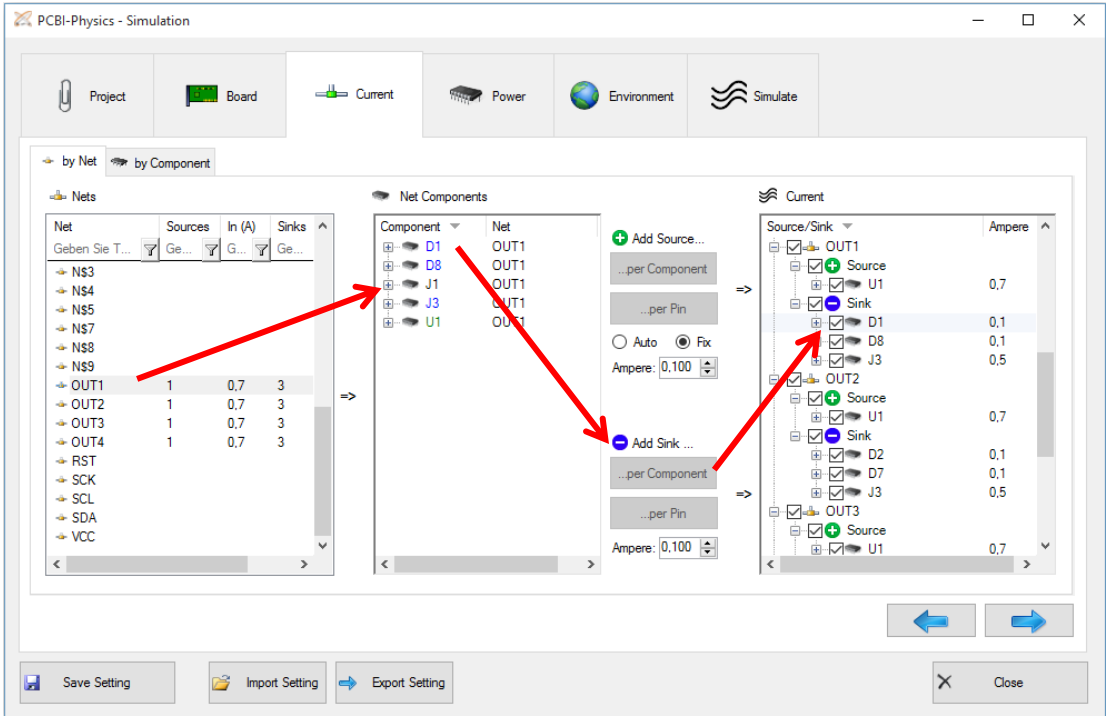
How to run the Simulation?

3) Enter Current Sources / Sinks for each important net



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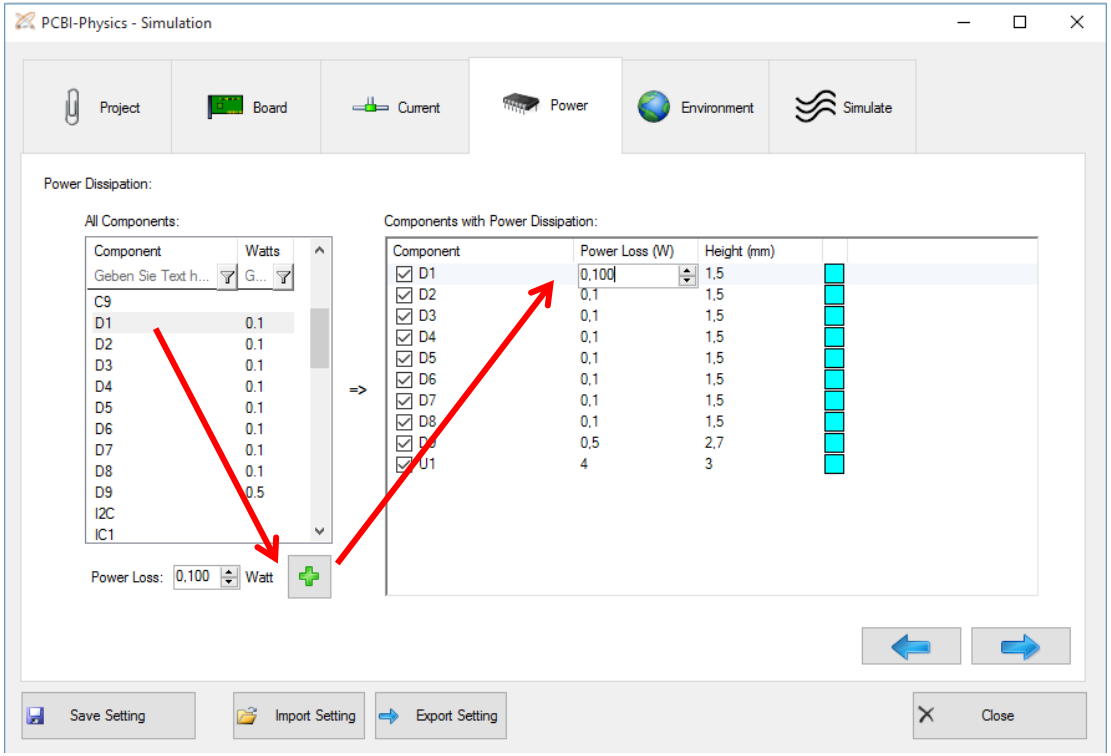
How to run the Simulation?

4) Enter Power Dissipation for each Component



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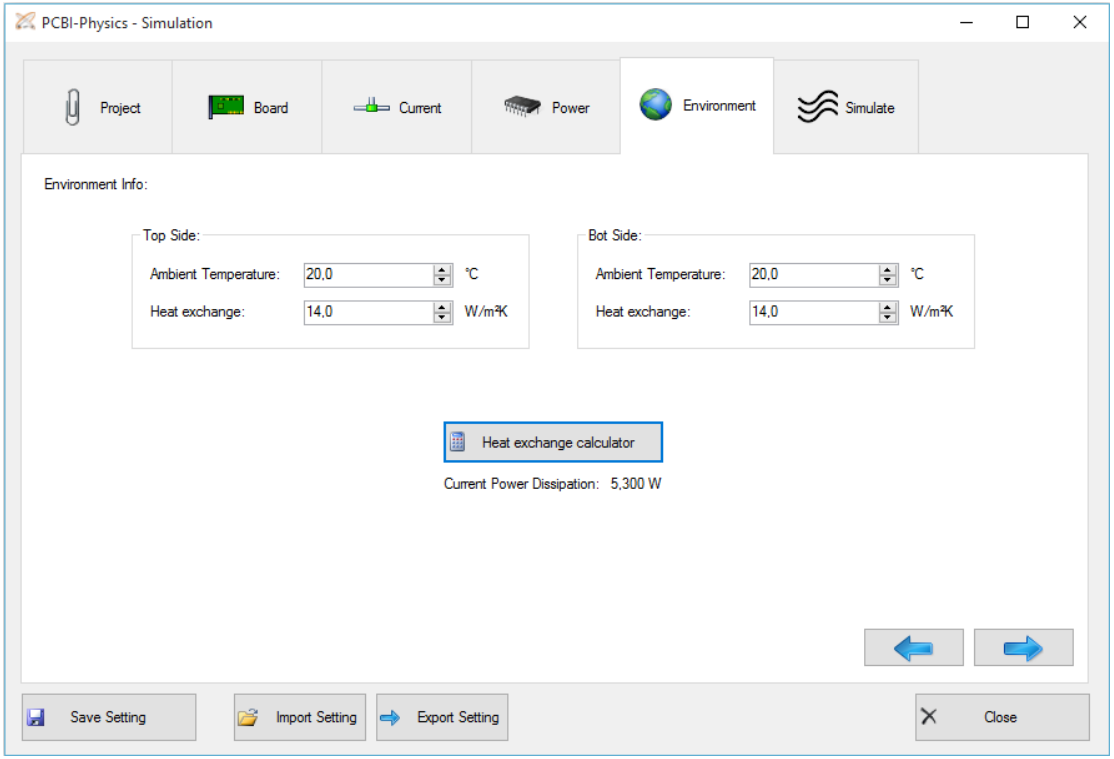
How to run the Simulation?

5) Enter environmental Temperatures and Heat Exchange values



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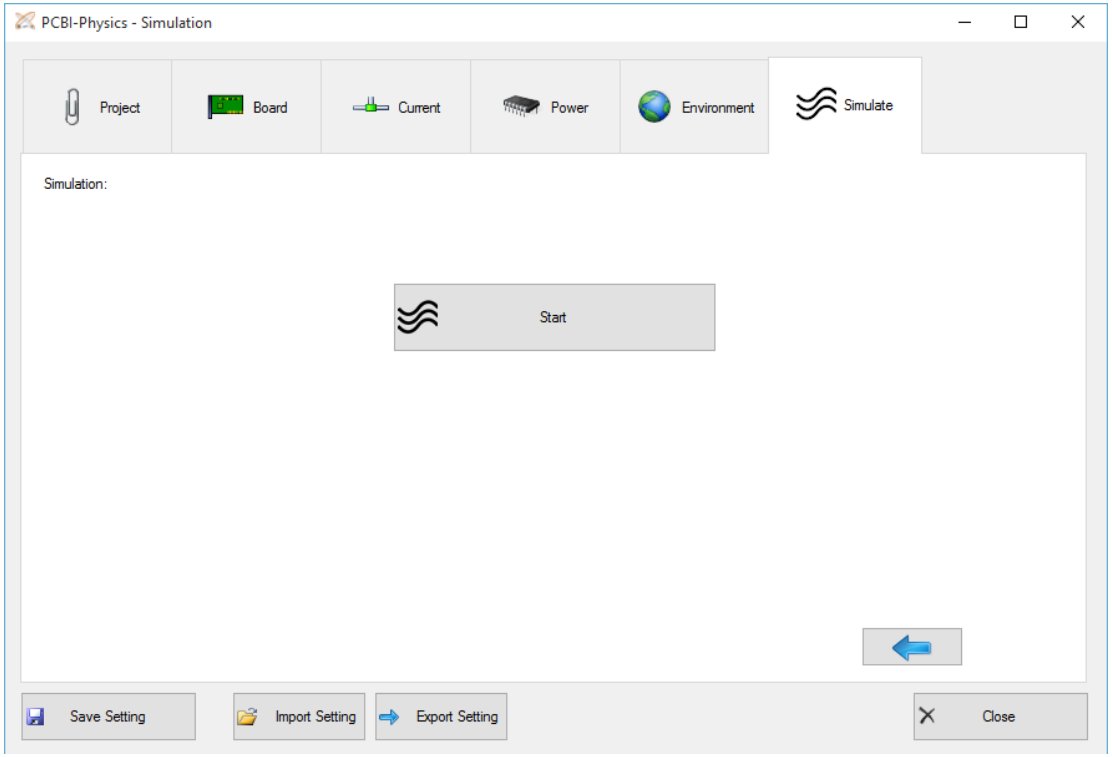
How to run the Simulation?

6) Click “Start” to initiate the simulation process



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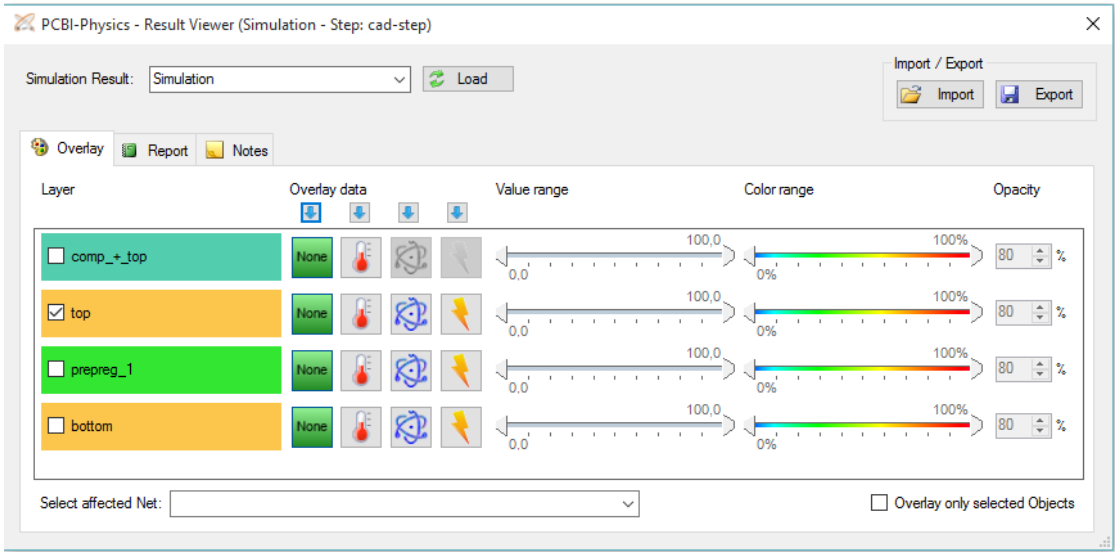
What does the result look like?

The simulation result can be evaluated in the “Result Viewer” by a graphical overlay on the CAD data or with the help of a report.

For documentation issues it is possible to add Notes showing the simulated values at important locations.



The following slides will give a few examples…

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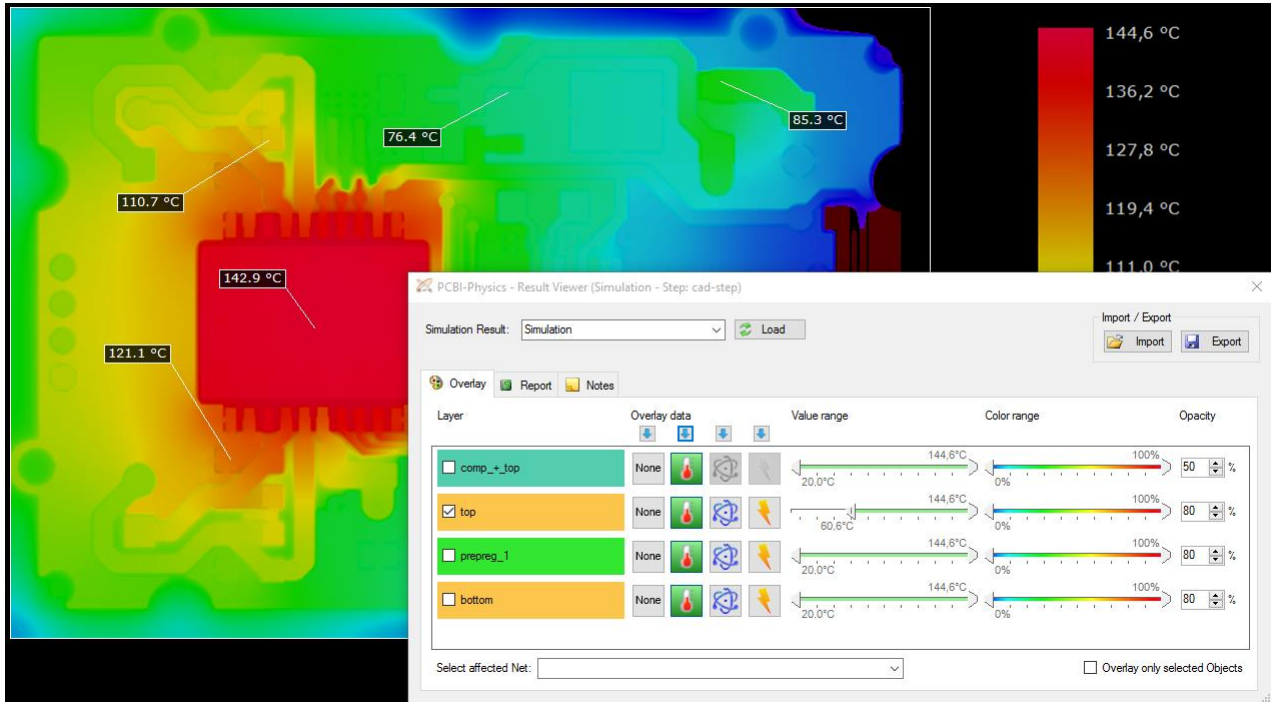
What does the result look like?

Example 1: Temperature Overlay with Notes



Temperature on the top signal layer (Filter: Temperature > 60°C)

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What does the result look like?

Example 2: Current Density in the net "OUT1"

Current Density in the net "OUT1" over all layers

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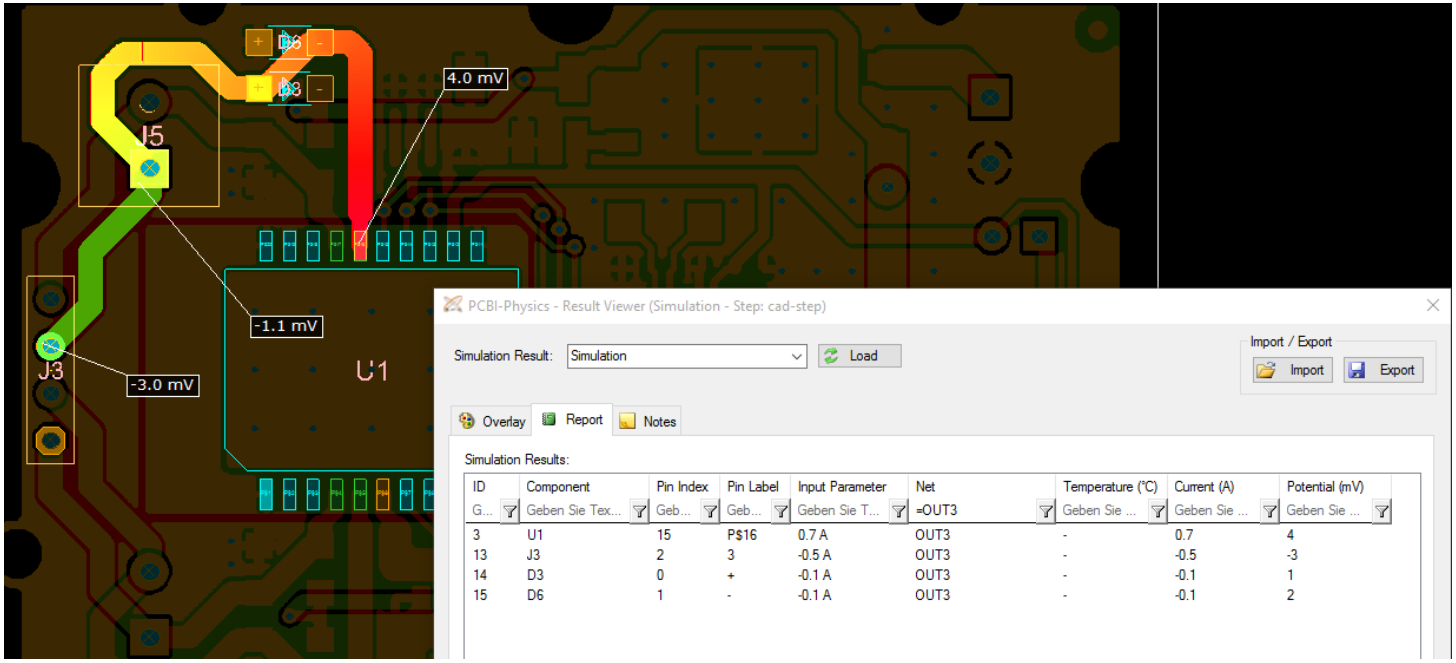
What does the result look like?

Example 3: Voltage Drop in the net “OUT3”



Voltage Drop in the net “OUT3” (Graphically and as Report)
With this information the Resistance between e.g. U1 and J3 can be calculated (R = U/I)

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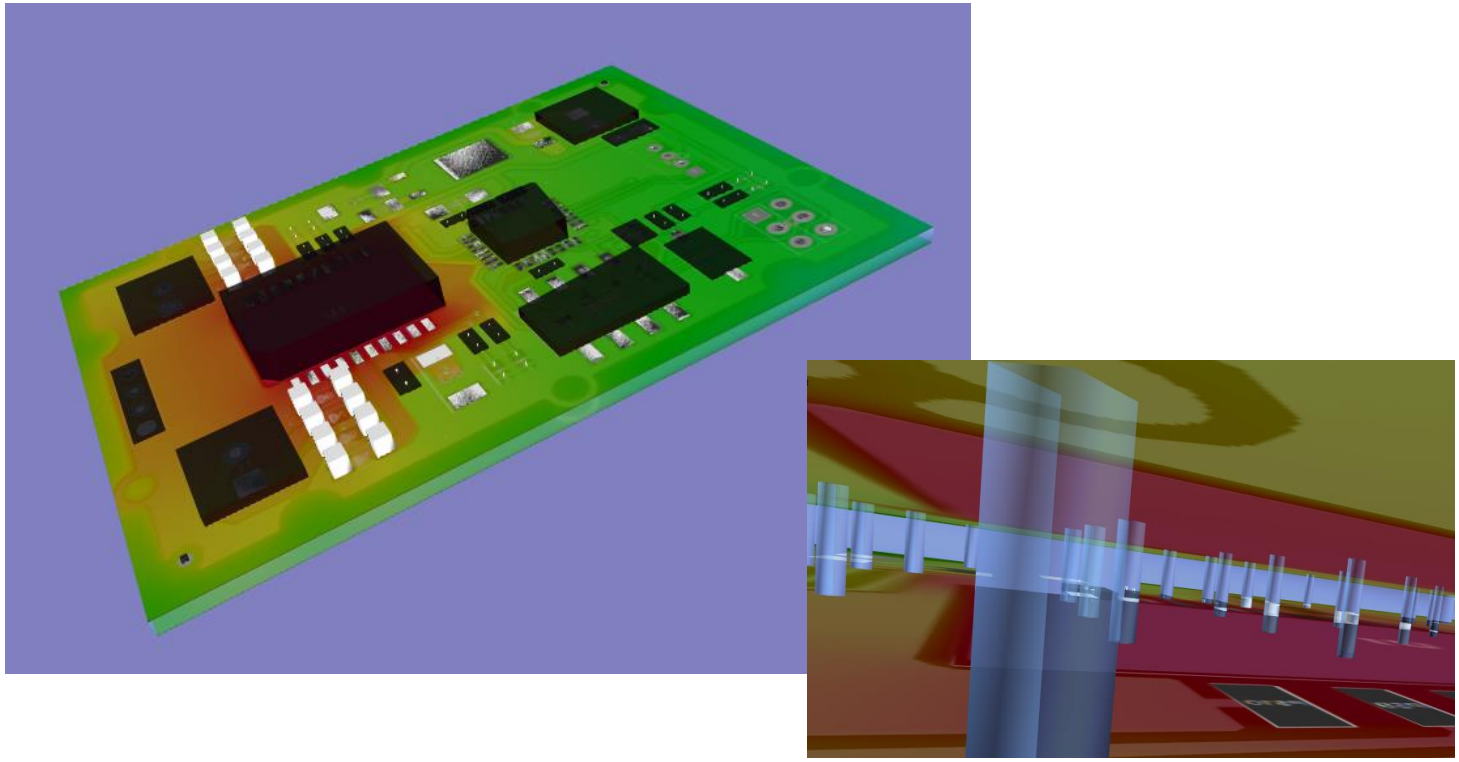
What does the result look like?

Example 4: 3D Views with Temperature Overlay



3D Views with Temperature Overlay

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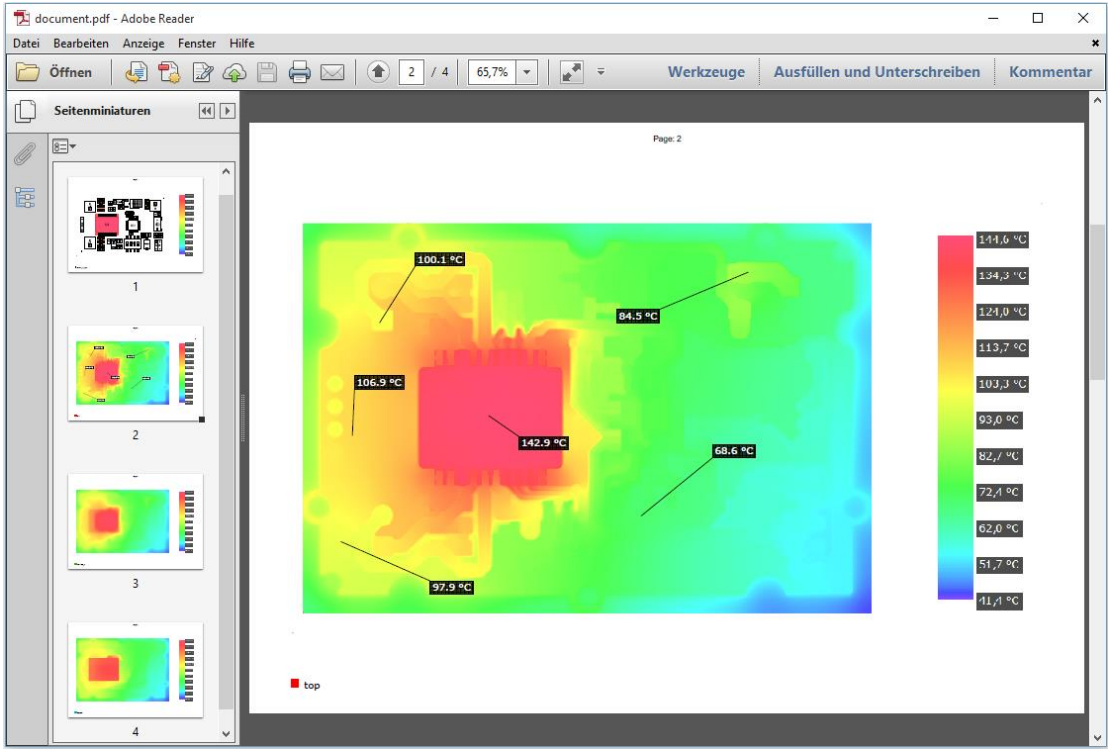
What does the result look like?

Example 5: PDF Documentation



PDF Document with Temperature for each layer

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We piqued your interest?

Get in touch!

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or find more information here:
www.PCBi-Physics.com

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Useful Links:

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